

Hawley's Condensed Chemical Dictionary

ELEVENTH EDITION

Revised by

N. Irving Sax

and

Richard J. Lewis, Sr.

BEST AVAILABLE COPY



VAN NOSTRAND REINHOLD COMPANY

New York

BEST AVAILABLE COPY

Copyright © 1987 by Van Nostrand Reinhold Company Inc.

Library of Congress Catalog Card Number: 86-23333
ISBN: 0-442-28097-1

All rights reserved. Certain portions of this work copyright © 1930, 1920, 1919 by The Chemical Catalog Co., Inc. and 1981, 1977, 1971, 1966, 1956, 1950 by Van Nostrand Reinhold Company Inc. No part of this work covered by the copyright hereon may be reproduced or used in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems—without permission of the publisher.

Printed in the United States of America

Van Nostrand Reinhold Company Inc.
115 Fifth Avenue
New York, New York 10003

Van Nostrand Reinhold Company Limited
Molly Millars Lane
Wokingham, Berkshire RG11 2PY, England

Van Nostrand Reinhold
480 Latrobe Street
Melbourne, Victoria 3000, Australia

Macmillan of Canada
Division of Canada Publishing Corporation
164 Commander Boulevard
Agincourt, Ontario M1S 3C7, Canada

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Condensed chemical dictionary.
Hawley's condensed chemical dictionary.

Rev. ed. of: The Condensed chemical dictionary.
10th ed./rev. by Gessner G. Hawley, 1981.

I. Chemistry—Dictionaries. I. Hawley, Gessner
Goodrich, 1905— II. Sax, N. Irving (Newton Irving)
III. Lewis, Richard J., Sr. IV. Title.
QD5.C5 1987 540'.3'21 86-23333
ISBN 0-442-28097-1

1.45 (25C), insoluble in all organic solvents, resistant to concentrated alkalis with a limited number including rosin derivatives.

Use: Improves adhesion of vinyl ethyl ether to glass, metal, wood, plastic, paper, cellulose acetate, etc.

$\text{C}_6\text{H}_5\text{CH}_2\text{—}$.

In film form it is characterized by its resistance to weather, high strength, low permeability, and excellent adhesion as oil, chemical solvent, etc.

Use: For food packaging; for outdoor use, packaging, etc.

vinyl acetal.

(saran). A stereoregular polymer.

Properties: Abrasion resistant, impermeable to flavor, attack, softened by chloroform, soluble in cyclohexane, noncombustible but self-extinguishing.

Use: For vinylidene chloride, vinylidene chloride with unsaturated compounds, oriented products, etc.

Products, especially meats, are impregnated with multiwall chemical processing equipment, fibers, bristles, etc.

yovac."

$\text{H}_2\text{C=CF}_2$.

carbon polymer suitable for injection molding and extrusion.

171C, thermally stable, noncombustible, self-extinguishing. Tensile strength 7000 psi, elongation 5500 psi, thermal stability 10,000 psi, thermal stability 10,000 psi, water absorption 1.76, refr index 1.47, degradation, electrically stable, attacked by hot acid or n-butylamine.

Forms: Powder, pellets, solution, and dispersion. Use: Insulation for high-temperature wire, tank linings, chemical tanks and tubing, protective paints and coatings with exceptional resistance (30 years) to weathering and UV, valve and impeller parts, shrinkage tubing to encapsulate resistors, diodes, and soldered joints, sealant. See also fluorocarbon polymer.

polyvinyl isobutyl ether. (PVI; polyvinyl ether). $[\text{—CH(OCH}_2\text{CH(CH}_3)_2\text{CH}_2\text{—})}_n$.

Properties: White, opaque elastomer or viscous liquid depending on molecular weight; almost odorless; d 0.91–0.93 (20C); refr index 1.45–1.46 (25C); insoluble in water, ethanol, and acetone; soluble in most other organic solvents; stable toward dilute and concentrated alkalis and dilute acids. Compatible with a limited number of commercial resins, including rosin derivatives and some phenolics. Combustible.

Derivation: Polymerization of vinyl isobutyl ether by peroxides or acid catalysts.

Grade: As 100% material in three molecular weight ranges.

Use: Adhesives, waxes, tackifiers, plasticizers; surface coatings, laminating agents, cable filling compositions, lubricating oils.

polyvinyl methyl ether. (PVM).

$[\text{—CH}_2\text{CHOCH}_3\text{—})}_n$. A nonionic polymer of high molecular weight.

Properties: Colorless (when pure), tacky liquid; soluble in water at 32C above which it precipitates from water but redissolves on cooling. Soluble in most organic solvents except aliphatic hydrocarbons. Compatible with rubber latexes, rosin derivatives, and some phenolics; d 1.05; refr index 1.47; solidifies near 0C. Combustible. Derivation: Polymerization of vinyl methyl ether with peroxides or acid catalysts.

Use: Pressure-sensitive and hot-melt adhesives, bonding of paper to polyethylene, laminating adhesive, tackifier and plasticizer for coatings, heat sensitizer for rubber latex, pigment binder in textile finishing, printing inks, protective colloid in emulsions.

polyvinyl methyl ether-maleic anhydride.

(PVM/MA).

$[\text{—CH}_2\text{CHOCH}_2\text{CHCOOCOCH—})}_n$.

Water-soluble copolymer of vinyl methyl ether and maleic anhydride.

Use: Protective colloid, dispersing agent, thickener, binder, adhesive and size in coatings, detergents, emulsions, paper, textiles, leather, latex, rust preventive, foam stabilizer.

poly-2-vinylpyridine.

$[\text{—CH(C}_5\text{H}_4\text{N)—CH}_2\text{—})}_n$. A vinyl-type

polymer suggested for use as a photographic dye mordant, tablet coating material, antistat for textiles and paper, and textile dye receptor.

polyvinylpyrrolidone. (PVP).

CAS: 9003-39-8. $(\text{C}_5\text{H}_7\text{NO})_n$.

Properties: White, free-flowing, amorphous powder or aqueous solution, soluble in water and organic solvents, compatible with wide range of hydrophilic and hydrophobic resins, d 1.23–1.29, bulk d 15lb/ft³, hygroscopic.

Grade: Various molecular weight: 10,000, 40,000, 160,000, 360,000.

Use: Pharmaceuticals; blood plasma expander; cast films adherent to glass, metals, and plastics; complexing agent; detoxification of chemicals such as dyes, iodine, phenol, and poisonous drugs. Tableting, photographic emulsions, cosmetics (hair sprays, shampoos, hand creams, skin lotions), dentifrices, dye-stripping, textile finishes, protective colloid, detergents, adhesives, beer and wine clarification.

polyvinyl resin. (vinyl plastic).

Any of a series of polymers (resins) derived by polymerization or copolymerization of vinyl monomers $(\text{CH}_2=\text{CH—})$ including vinyl chloride and acetate, vinylidene chloride, methyl acrylate and methacrylate, acrylonitrile, styrene, the vinyl ethers, and numerous others. Specifically, polyvinyl chloride, acetate, alcohol, etc., and copolymers or closely related materials.

See under both vinyl and polyvinyl.

"Polywood."TM TM for polyester coatings for wood furniture and other wood products.

"Polyzyme" P.²¹² TM for a product containing diastatic and proteolytic enzymes.

Properties: Dry, fine, white powder; fully water soluble; nonflammable; optimum pH for diastatic reaction, 7.0–7.2, for proteolytic reaction 7.5–8.0, optimum temperature 45C.

Use: Desizing of textile fabrics preparatory to dyeing, bleaching, mercerizing, printing, and finishing.

"Poly-Zole" AZDN.⁵¹¹ TM for azodiisobutyronitrile, a blowing agent and catalyst for plastics.

Pomeranz-Fritsch reaction. Formation of isoquinolines by the acid-catalyzed cyclization of benzalaminoacetals prepared from aromatic aldehydes and aminoacetal.

Ponceau 3R. (3-Hydroxy-4-[2,4,5-trimethylphenyl]azo]-2,7-naphthalenedisulfonic acid, disodium salt; C.I. No. 16155).